

ABSTRACT

A rolling bearing suitable, for example, to a ball bearing (3) which is used being assembled between a shaft (2) and a housing (4) of an HDD spindle motor unit is provided. For this end, the composition for the steel material forming the inner ring and the outer ring is defined within a range of C: 0.8 to 1.20% by weight, Si: 0.60% by weight or less, Mn: 0.25% by weight or less, Cr: 1.00 to 1.50% by weight and Mo: 0.60 to 1.50% by weight. The inner ring and the outer ring formed of the steel material are applied with hardening/tempering, the amount of residual austenite is 0% by volume and the surface hardness is HRC of 62 or more. The rolling element formed of martensitic stainless steel, and formed with a nitride layer at a thickness of 3 μm or more on the surface by nitridation after hardening/tempering, and then finished to a surface roughness of 0.1 μm Ra or less was used.